

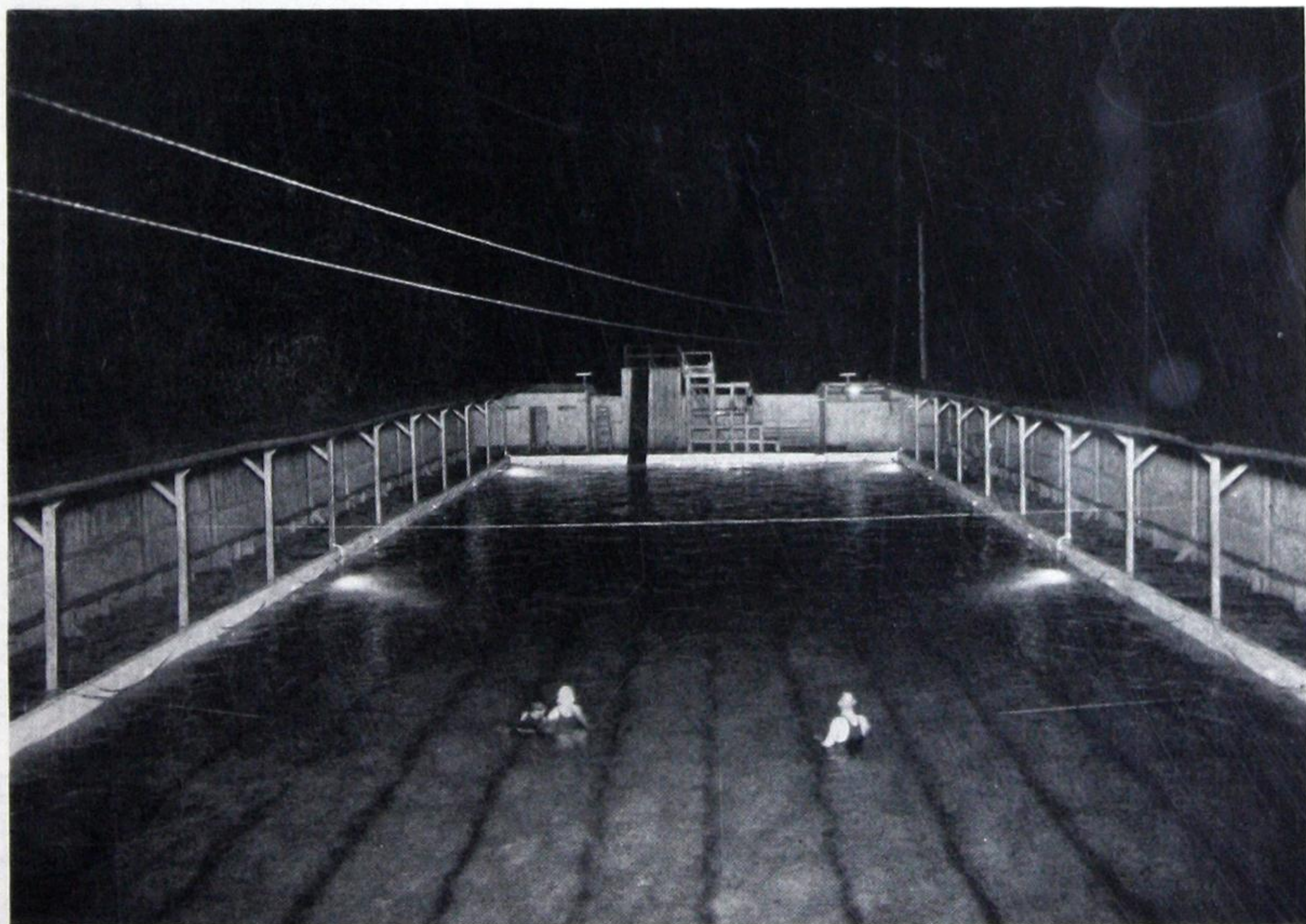
SWIMMING POOL LIGHTING

By F. D. CROWTHER, *Illuminating Engineering Laboratory, General Electric Company, Schenectady, N. Y.*

The lighting of swimming pools is attracting considerable attention because people are realizing that it is very feasible and that the majority of people are not able to use the pools during the daylight hours on working days. Indoor pools must invariably be artificially lighted, though skylights are often used.

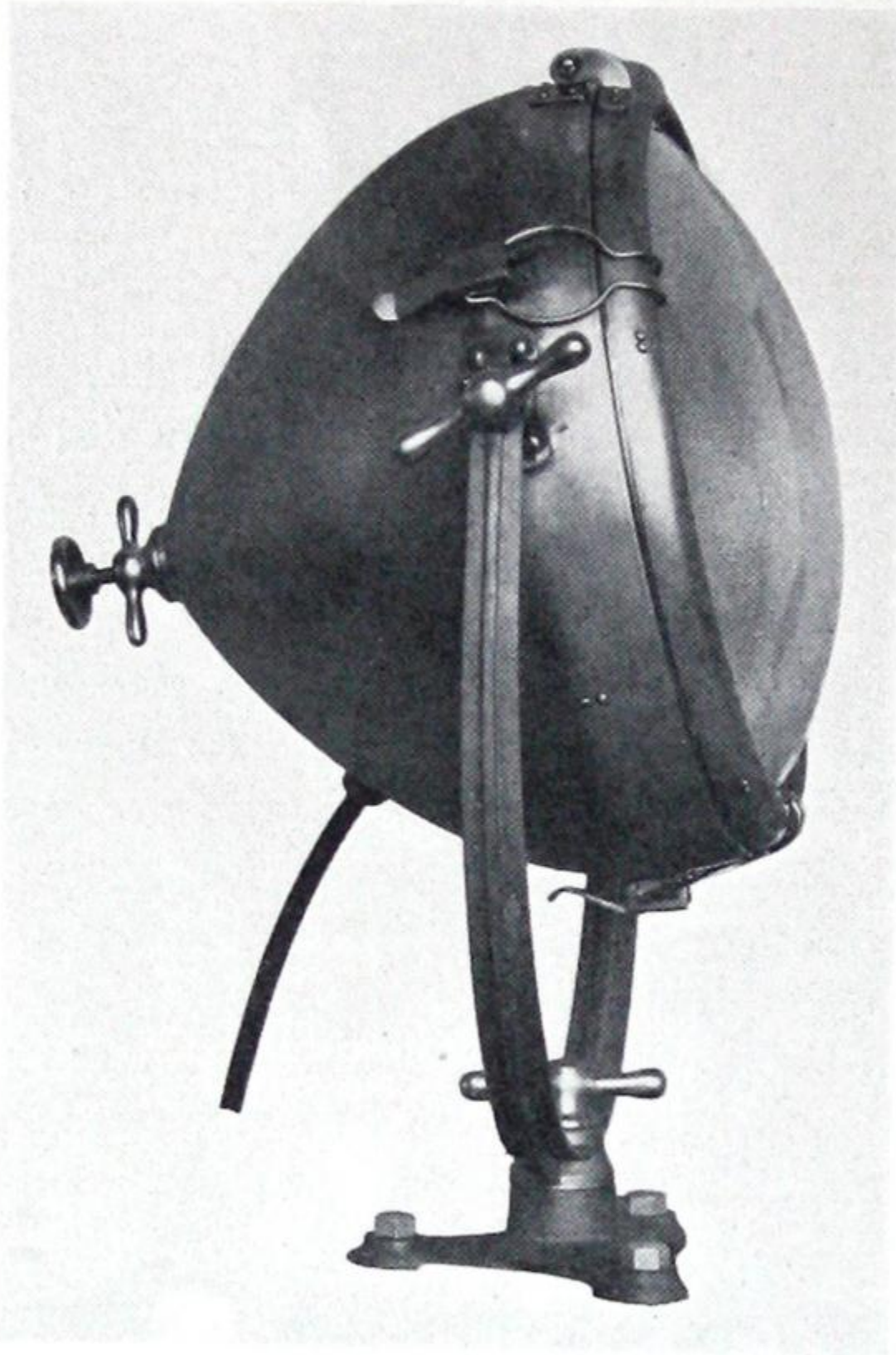
Swimming pools may be lighted from beneath the surface of the water or from above the surface. The underwater method is to be recommended because the greater portion of light striking the surface of water is reflected. The result with overhead light-

ing is that the pool appears dark and deep unless it is a well lighted indoor white tile pool where the cross reflections are sufficient to light the bottom. When the water is lighted from beneath, the light is reflected at the surface and returns into the water giving a life and sparkle to the water that is most inviting. Swimmers are more easily watched and the bubbles of air which a diver draws in sparkle and effervesce. Underwater lighting is also a factor of safety in a public pool because objects are readily visible to the guard or other swimmers, even though they are on the bottom. Another



UNDERWATER FLOODLIGHTING OF SWIMMING POOL

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TYPE L-30 NOVALUX
FLOODLIGHTING PROJECTOR

Mounted on swivel and trunnion base, equipped with lightly stippled glass door and 500-Watt Floodlighting lamp.

advantage is that of sanitation. A well lighted pool must be kept clean, which will cause it to be more attractive and a greater protection to swimmers.

The underwater method of lighting may be divided into three classes, each of which is discussed in detail below. The three methods are dry niche method, wet niche method, and a method adapted to existing pools.

DRY NICHE

The best method of lighting swimming pools is the dry niche, underwater method. Type L-30A Novalux floodlighting projectors equipped with 40° spread clear door and 500-watt general service lamps are mounted on twenty-foot centers around the edge of the pool. The projectors are mounted in a niche in the side of the pool and are supported on an adjustable bracket. A manhole is provided for servicing the projector and for inserting color plates if color is



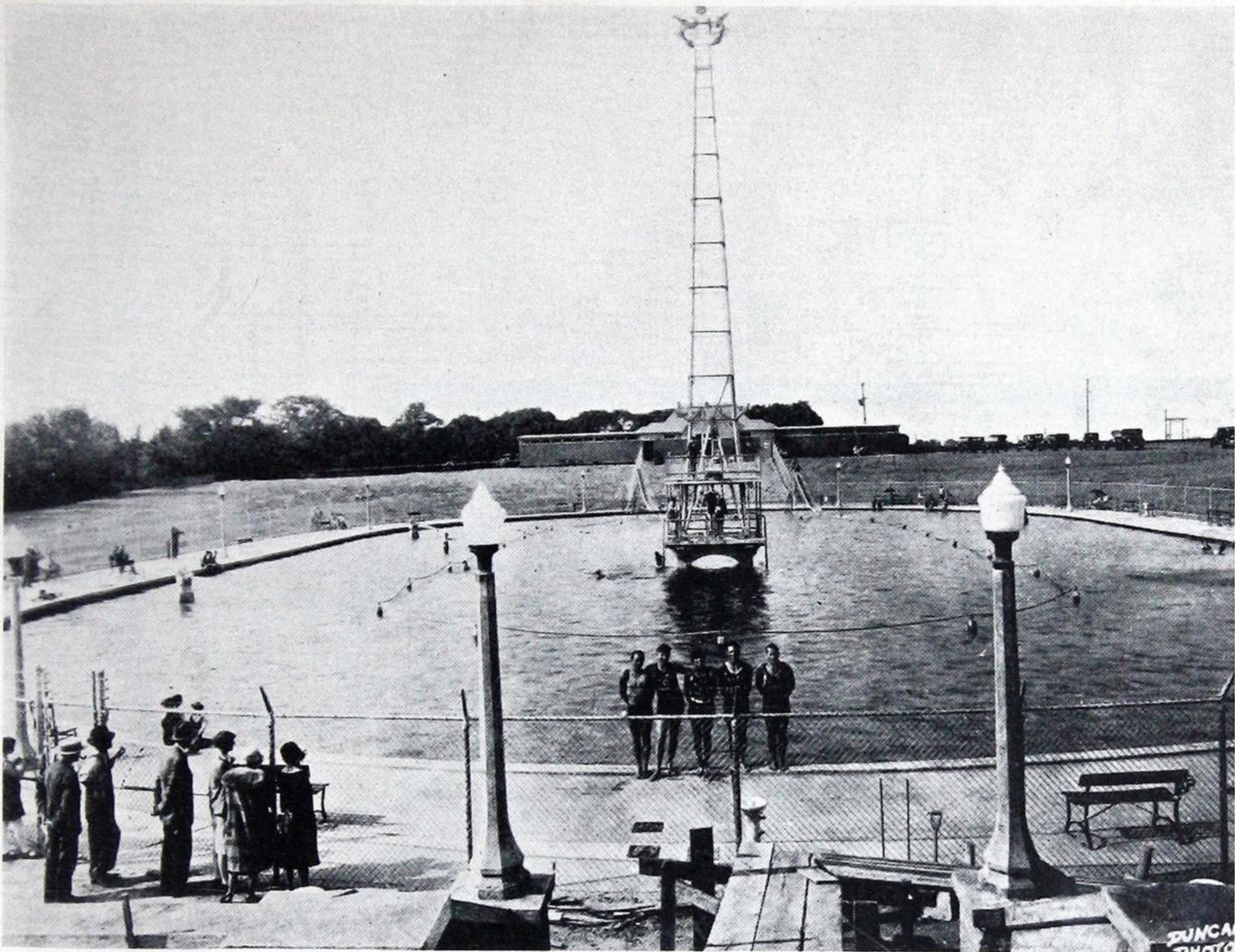
SUBMERSIBLE ELECTRIC FLOOD-
LIGHTING PROJECTOR

desired for special occasions. By the use of a dry niche with a manhole it is possible to relamp or otherwise service the projectors without draining the pool.

The type L-30A Novalux floodlighting projector comprises a 500-watt general service lamp in the focus of a silvered glass parabolic reflector. The reflector is encased in a sheet copper casing. All parts of the unit are constructed of either bronze or copper to protect against any possible corrosion.

WET NICHE

In pools which can be drained readily if necessary in order to service the lighting equipment, the equipment may be mounted in niches along the walls with no attempt to keep out the water. For this application Type L-23 Novalux submersible floodlighting projectors equipped with 40° spread doors and 500-watt floodlighting lamps are recommended, mounted on twenty-foot centers around the pool. The front of the niche



MUNICIPAL SWIMMING POOL, URBANA, ILL. INSTALLATION OF FORM 8 NOVALUX UNITS ON CONCRETE POSTS

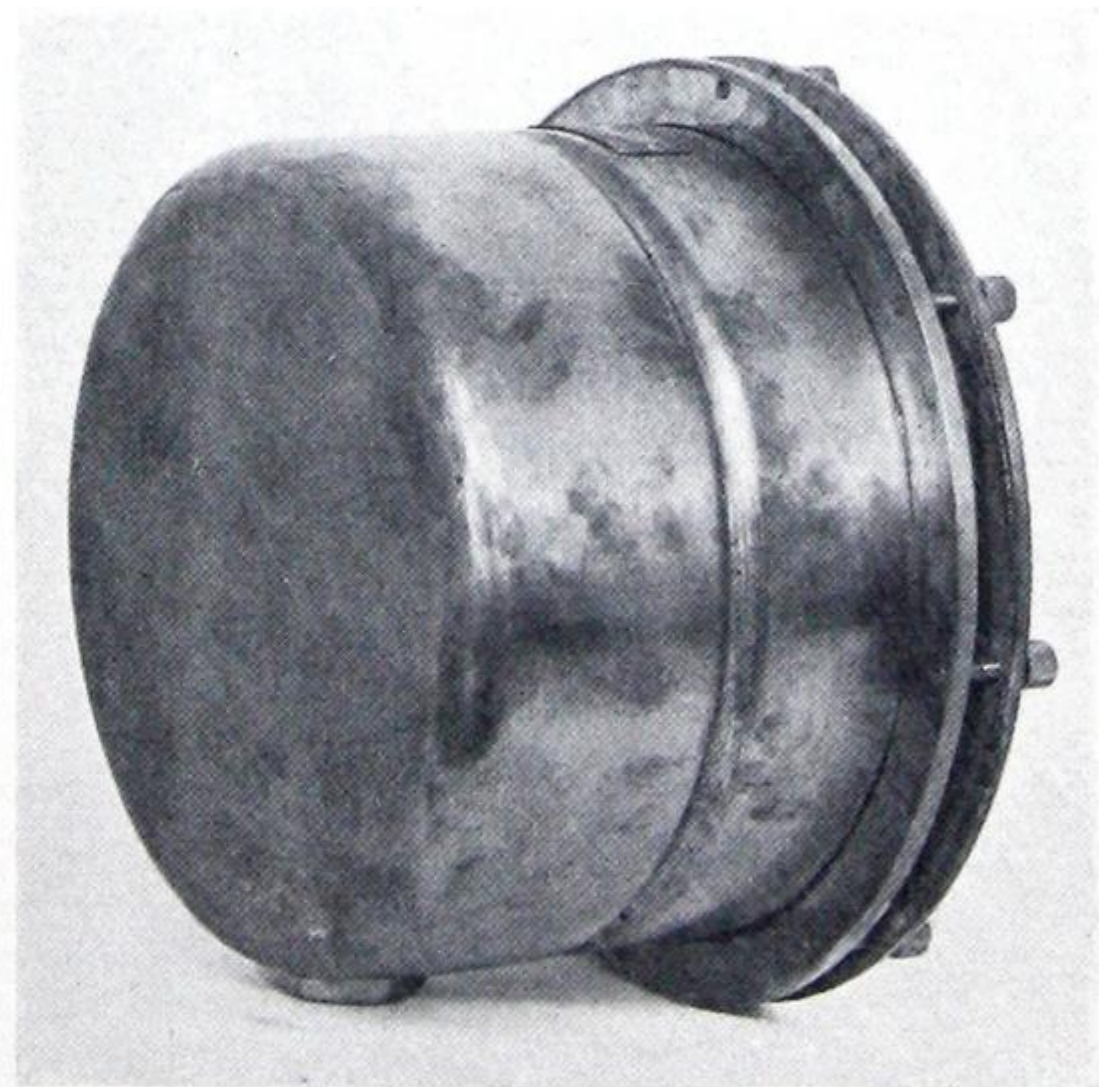
is closed by a bull mesh door to keep swimmers away from the projector and niche. It is advisable to provide a drain for the projector and to provide an air vent to eliminate breathing. The expansion and contraction of the air within the projector, or breathing, as it is known, when the lamp is turned on and off will tend to draw water into the unit, no matter how well it may be sealed. The air vent and drain will remedy this situation.

The type L-23 floodlighting projector comprises a 500 or 1000-watt floodlighting lamp in the focus of a silvered glass parabolic reflector. The reflector is encased in a water-proof aluminum alloy casing, with a special heat resisting glass front door.

UNDERWATER METHOD IN EXISTING POOLS

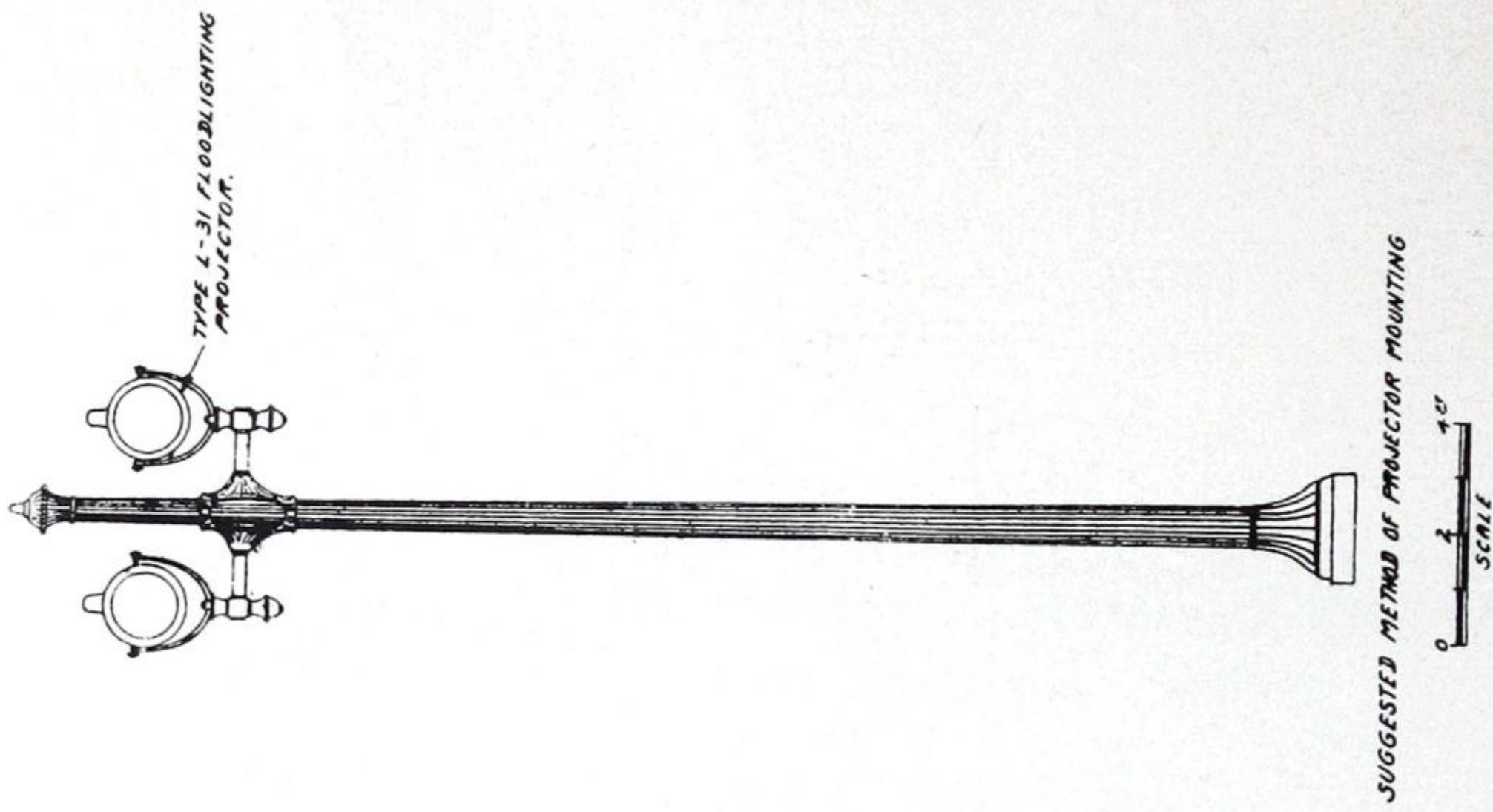
Either of the two methods described above may be installed in existing pools,

but in some cases the cost may be excessive. To provide a less expensive method, smaller units are proposed. Type L-33 Novalux submersible floodlighting projectors equip-

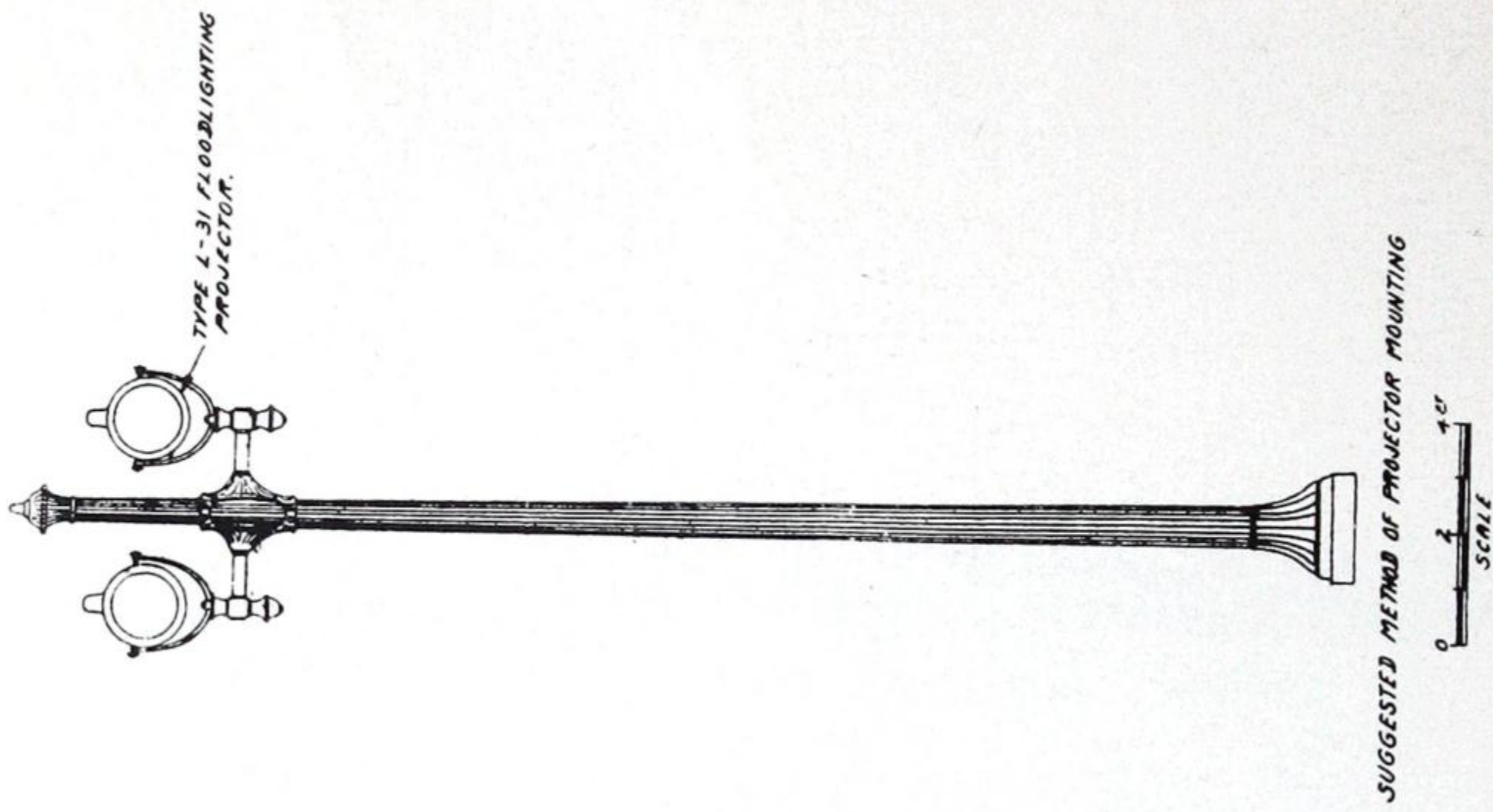


SWIMMING POOL FLOODLIGHT PROJECTOR

721 11150-0000



○-○ 2" TYPE 1-31 NOVALUX FLOODLIGHTING PROJECTORS, HEAVILY STIMPLED CLEAR DOOR AND 1000 WATT MAZDA GENERAL SERVICE LAMPS MOUNTED 25 FT HIGH



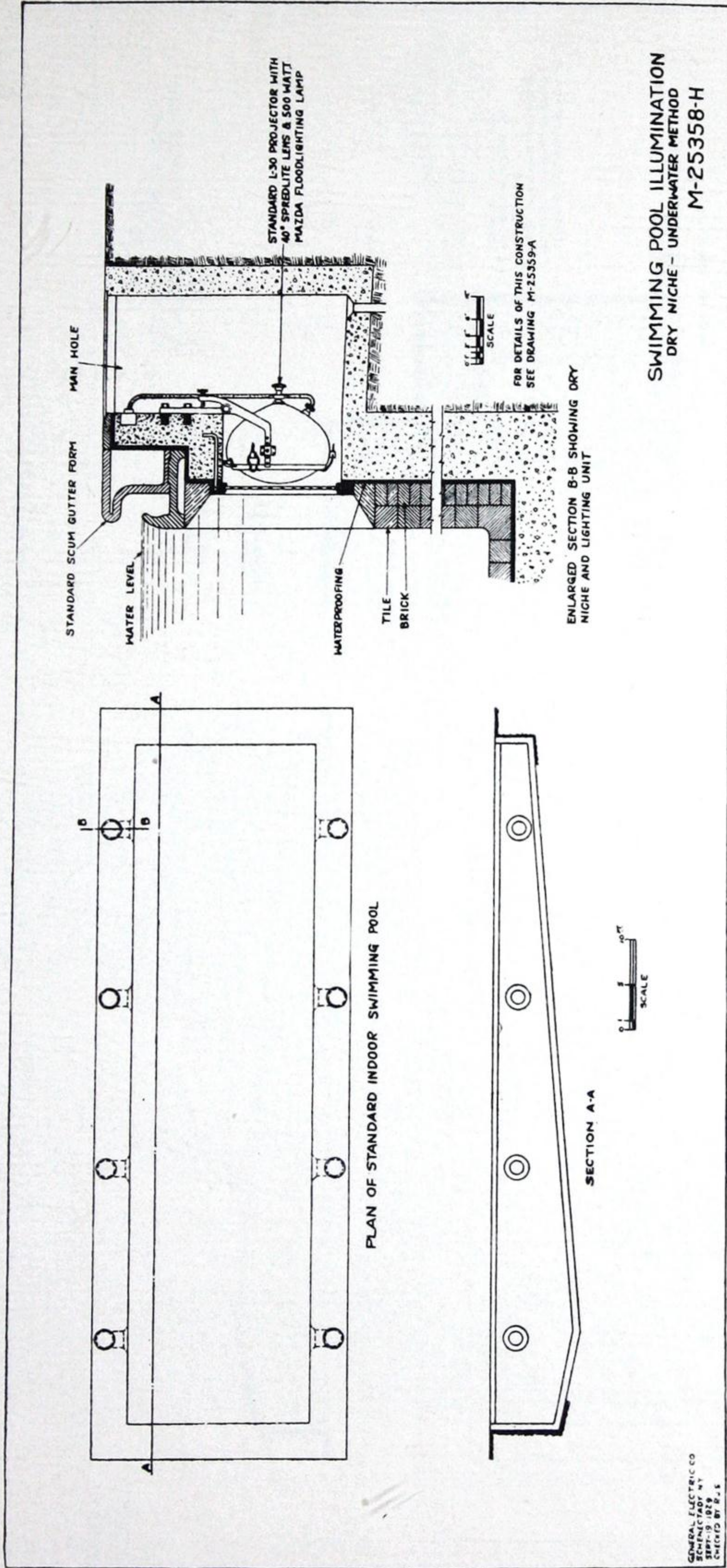
SUGGESTED METHOD OF PROJECTOR MOUNTING



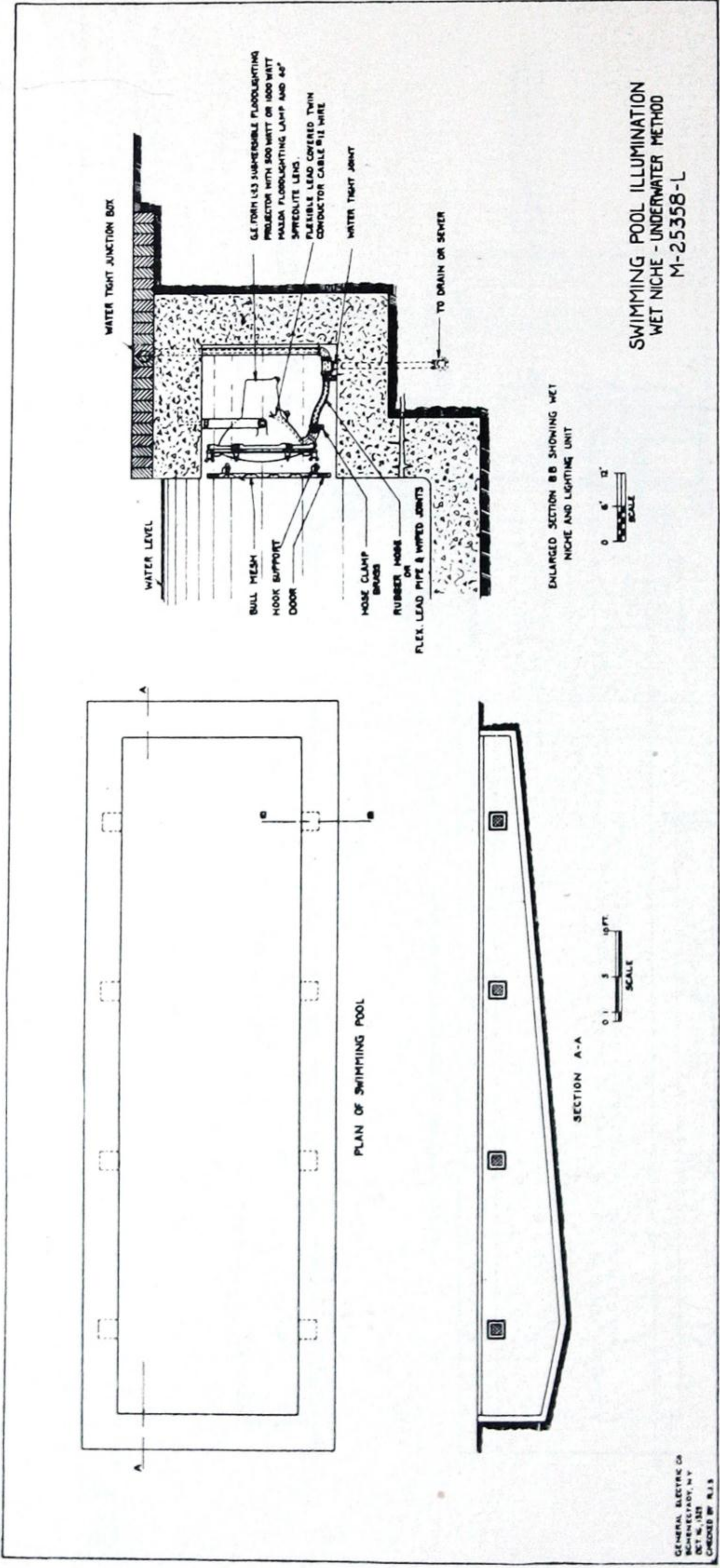
SWIMMING POOL ILLUMINATION EXTERIOR FLOODLIGHTING METHOD

M-25358-V

ILLUMINATING ENG. LABORATORY
GENERAL ELECTRIC CO.
Schenectady, N.Y.
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PLAN FOR DRY NICHE UNDERWATER ILLUMINATION METHOD



PLAN OF WET NICHE UNDERWATER ILLUMINATION METHOD



AUDUBON PARK SWIMMING POOL, NEW ORLEANS, LA. INSTALLATION OF FORM 18 NOVALUX ON CONCRETE POST

ped with 40° spread door and 250-watt floodlighting lamp, are mounted on fifteen to twenty-foot centers. Preferably, a small niche should be cut in the wall to house the projector and keep it away from swimmers.

The piping may be arranged so that the entire pipe and unit may be removed for servicing. Best results are obtained with the unit about one foot below the surface, but it may be advisable to mount it near the

bottom so that swimmers will not climb on it in getting in or out of the pool.

The type L-33 floodlighting projector comprises a 250-watt floodlighting lamp in the focus of a silvered glass reflector. The casing is of cast aluminum with a glass front door clamped to a heavy gasket by eight screws. It is advisable to provide a pipe to air to prevent drawing water into the unit when the lamp is turned out.

OUTDOOR EXTERIOR FLOODLIGHTING

With outdoor pools additional light should be provided around the pool for the convenience and protection of the bathers. If possible, it is advisable to use the underwater lighting in addition for the reasons described above. One such a method of lighting a pool is with Type L-31A Novalux floodlighting projectors mounted on ornamental poles in each corner of the pool. The type of pole used for mounting the

projectors will be governed by the type of pool, the more elaborate pools using more ornamental poles. The number of floodlighting projectors is governed by the size of the pool and beach. In general at least one watt per square foot of area should be provided, with a resulting intensity of approximately nine foot-candles, with the type L-31A projectors. For more elaborate pools this may be increased several times, there being practically no limit to the intensity of light desirable. It is recommended that the floodlights be mounted at least 25 feet high.

Another method of lighting swimming pools and their beaches is by the use of ornamental street lighting units. In this, ornamental units are mounted around the pool. The size and number of lamps depends on the size of the pool, the total wattage being approximately the same as if floodlighting were used.

